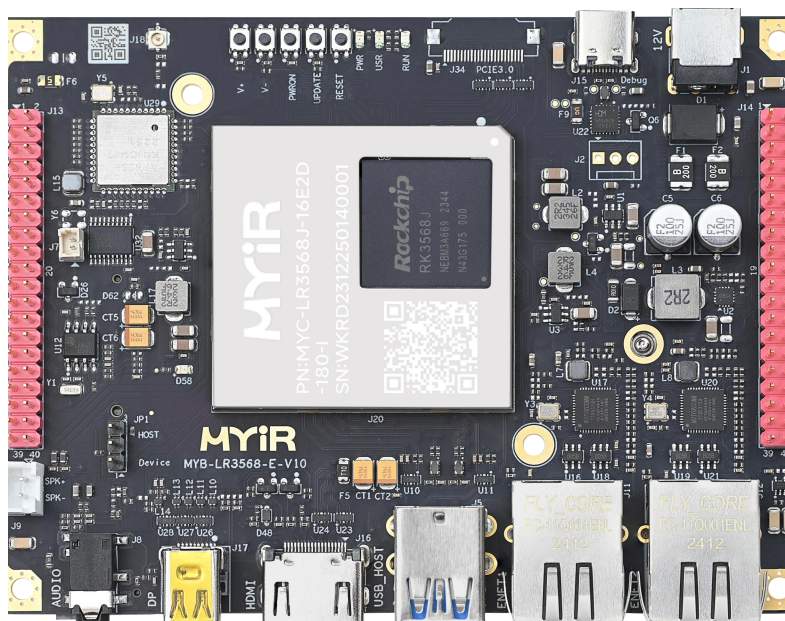


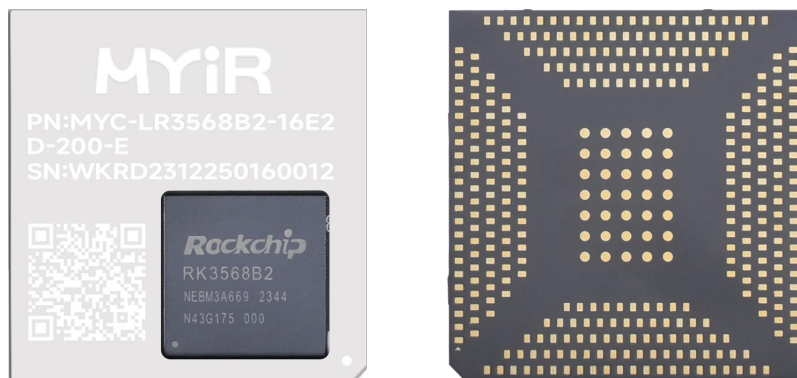
MYD-LR3568 Development Board Overview



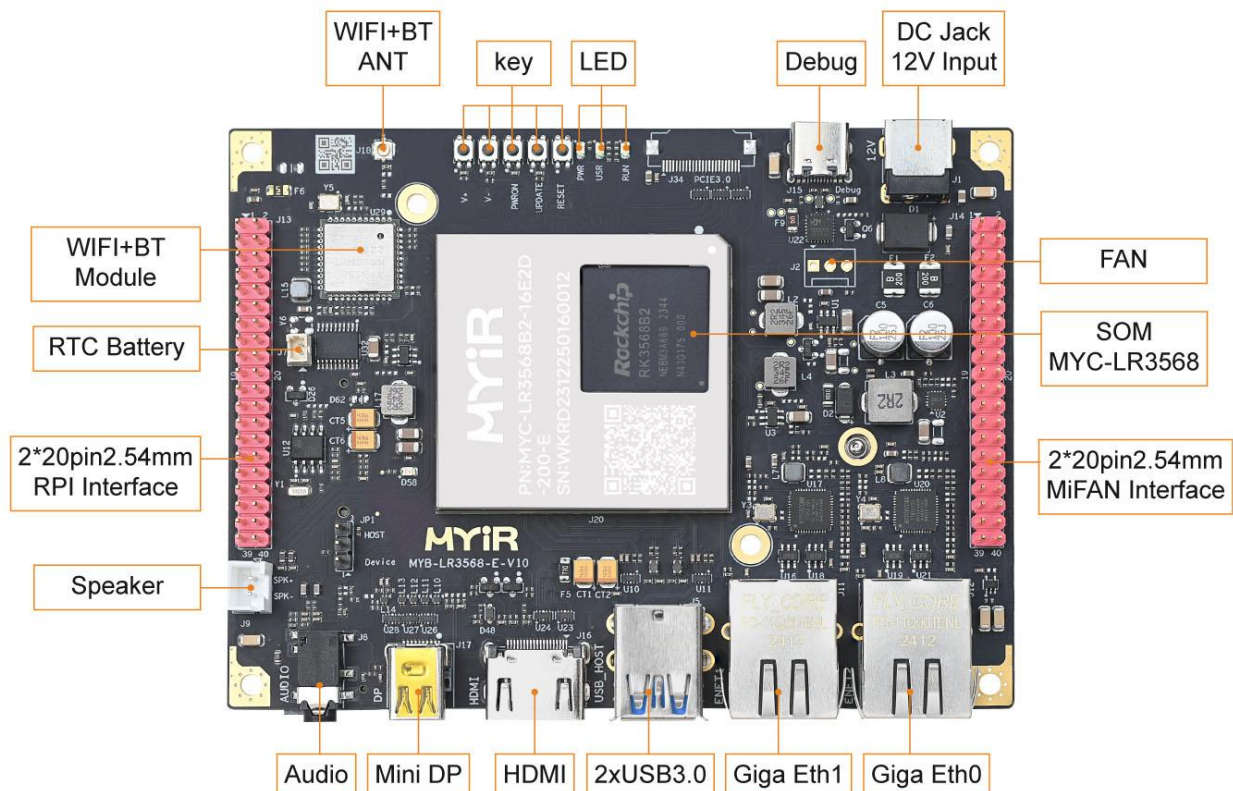
- ✓ MYC-LR3568 SOM as Controller Board
- ✓ Rockchip RK3568 Application Processor based on Up to 2.0GHz Quad ARM Cortex-A55 Cores
- ✓ Neural Processing Unit (NPU) operating at up to 1 TOPs
- ✓ 2GB LPDDR4, 16GB eMMC Flash, 32KB EEPROM
- ✓ 2x USB 3.0, 1x USB 2.0, 2x Gigabit Ethernet, WIFI/Bluetooth, 2x CAN, Micro SD Card Slot, M.2 SSD PCIe Slot
- ✓ 1x MIPI-CSI, HDMI/Mini-DP/MIPI-DSI/LVDS, Audio Interface
- ✓ Supports for Linux and Debian OS
- ✓ Optional 7-inch LCD Module and Camera Modules

The MYD-LR3568 Development Board is an advanced evaluation platform designed for the Rockchip RK3568 processor, which features up to 2.0GHz Quad ARM Cortex-A55 cores, providing various memory interfaces and enhancing the flexibility and convenience of the board to connect peripheral devices. The board supports for Linux and Debian OS, and it can withstand industrial working temperature range from -40 to 85 Celsius, or an extended range from -20 to 70 Celsius.

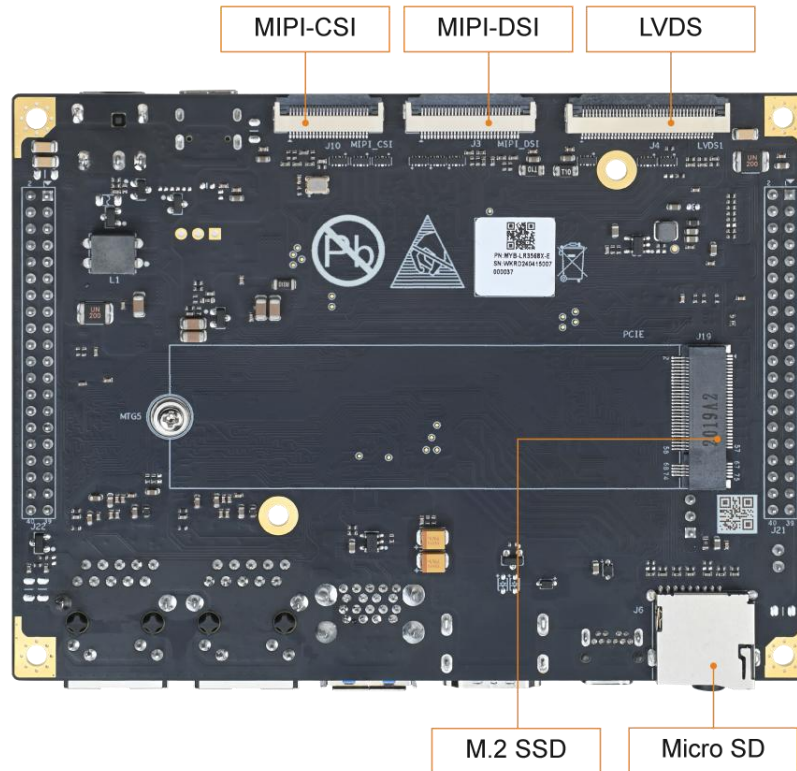
The MYD-LR3568 Development Board is built around the MYC-LR3568 System-On-Module (SOM) and has explored many features of the Rockchip RK3568 SoC through the 381-pin LGA expansion interface. This board is powered by 12V/3A DC power supply, equipped with two USB 3.0 ports, one USB 2.0 interface, dual Gigabit Ethernet interfaces, two CAN interfaces, and an integrated WiFi/Bluetooth module. Furthermore, it incorporates a Micro SD card slot and an M.2 NVMe SSD-compatible PCIe slot. The board also features a diverse set of multimedia interfaces, such as HDMI, Mini-DP, MIPI-DSI and LVDS display interfaces, along with a MIPI-CSI video input interface and audio capabilities. Moreover, the board offers flexibility for expansion through various peripheral signals accessible via the RPI Interface (GPIO/I2C/UART/SPI/CAN) and the MiFAN Interface (GPIO/I2C/UART/SPI/USB/PWM), enabling users to customize and enhance their development experience.



MYC-LR3568 System-On-Module (Top-view and Bottom-view)



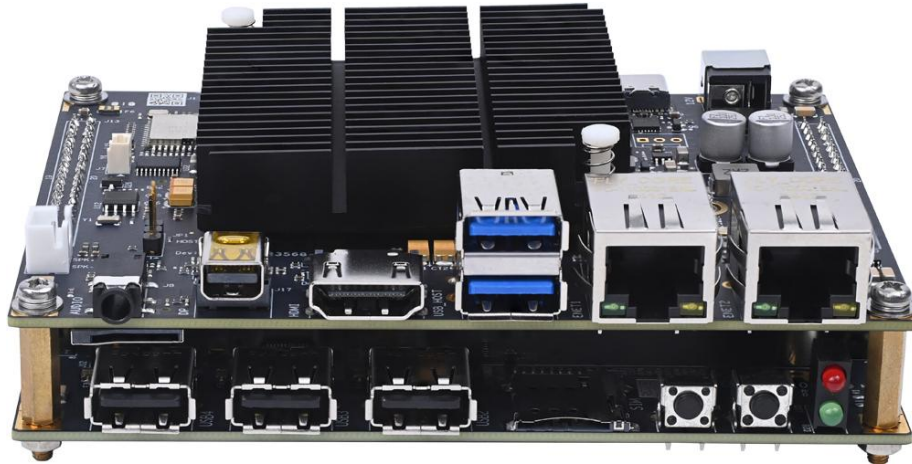
MYD-LR3568 Development Board (RK3568B2 version) Top-view (delivered with a pre-installed heatsink by default)



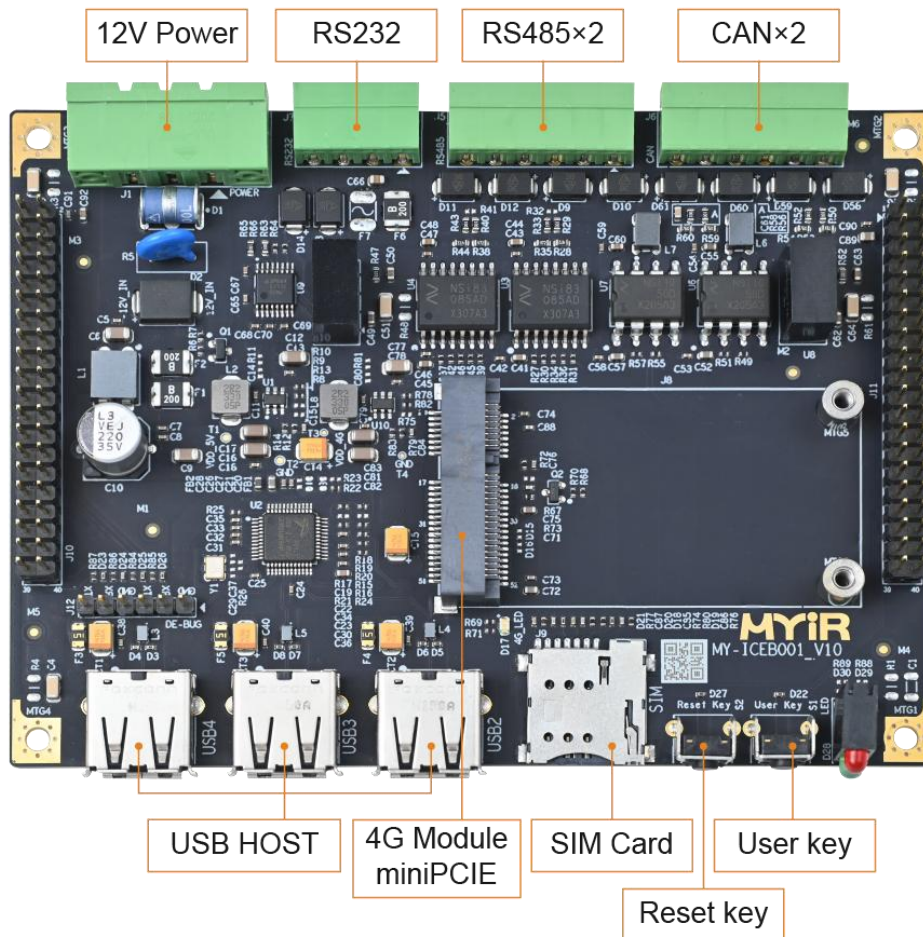
MYD-LR3568 Development Board (RK3568B2 version) Bottom-view

The MYD-LR3568 Development Board is delivered with a Quick Start Guide, one USB Type-C cable and one 12V/3A power adapter. MYIR also offers MY-CAM004M 4AHD-to-MIPI Camera Module, MY-CAM005M MIPI Camera Module, and MY-LVDS070C 7-inch LCD Module as add-on options for the board. The MYD-LR3568 offers a kit MYD-LR3568-GK with the RK3568J CPU version includes an expansion board MY-ICEB001 that extends three USB2.0 ports, one RS232 port, two RS485 port, two CAN interfaces and one M.2 Socket for a USB-based 4G/5G LTE Module with a SIM card holder. These enhancements significantly broaden the board's capabilities, enabling users to fulfill their unique project needs with versatility and flexibility.

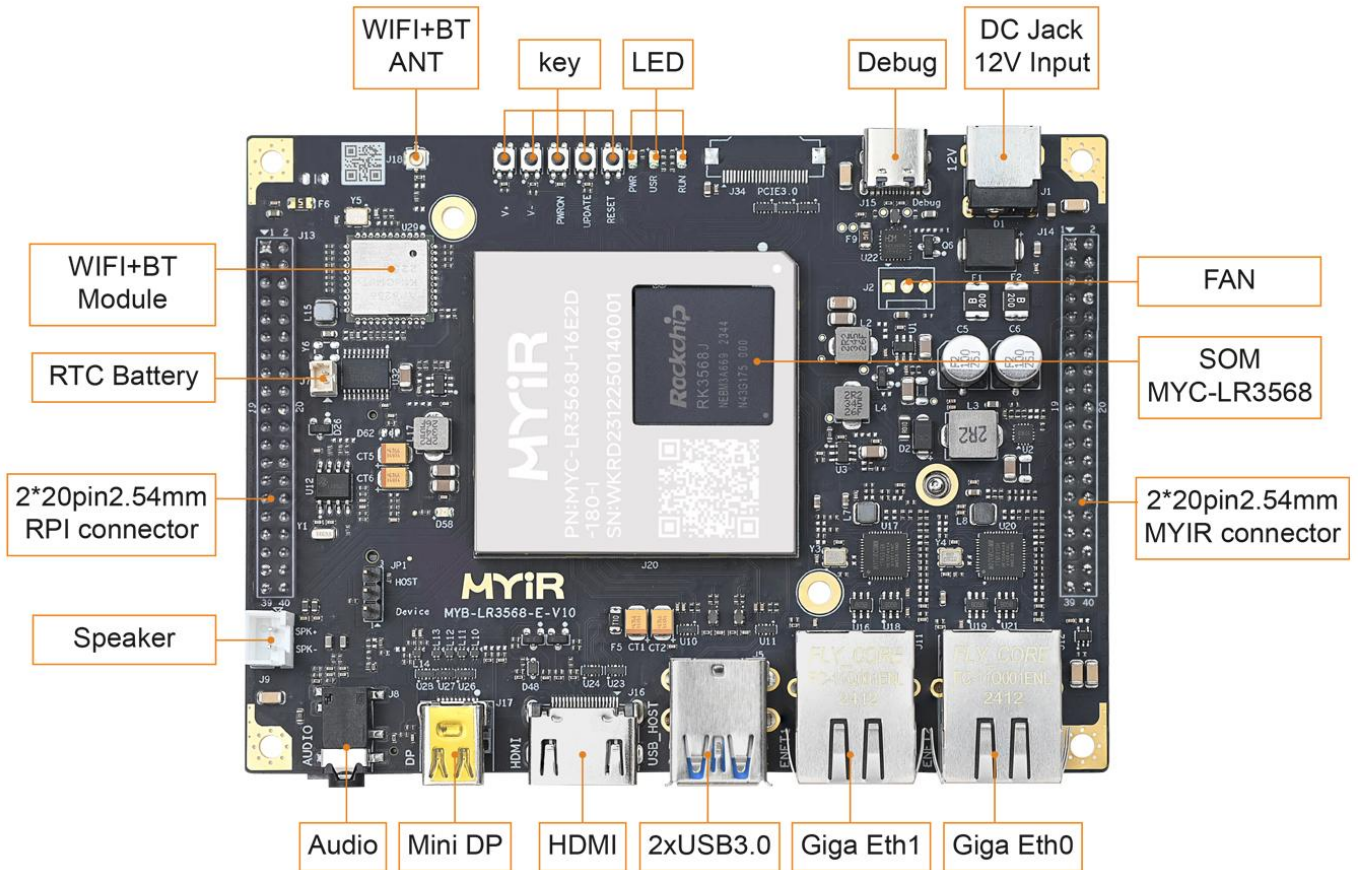
The MYD-LR3568 Development Board is capable of running Linux 5.10 and Debian 11 Operating Systems, ensuring a stable and efficient performance. MYIR provides abundant software resources, including kernel and driver source code, as well as detailed documentations and tools that facilitate rapid and easy development for users. These resources provide the necessary support to developers, enabling them to focus on creating innovative and exciting applications.



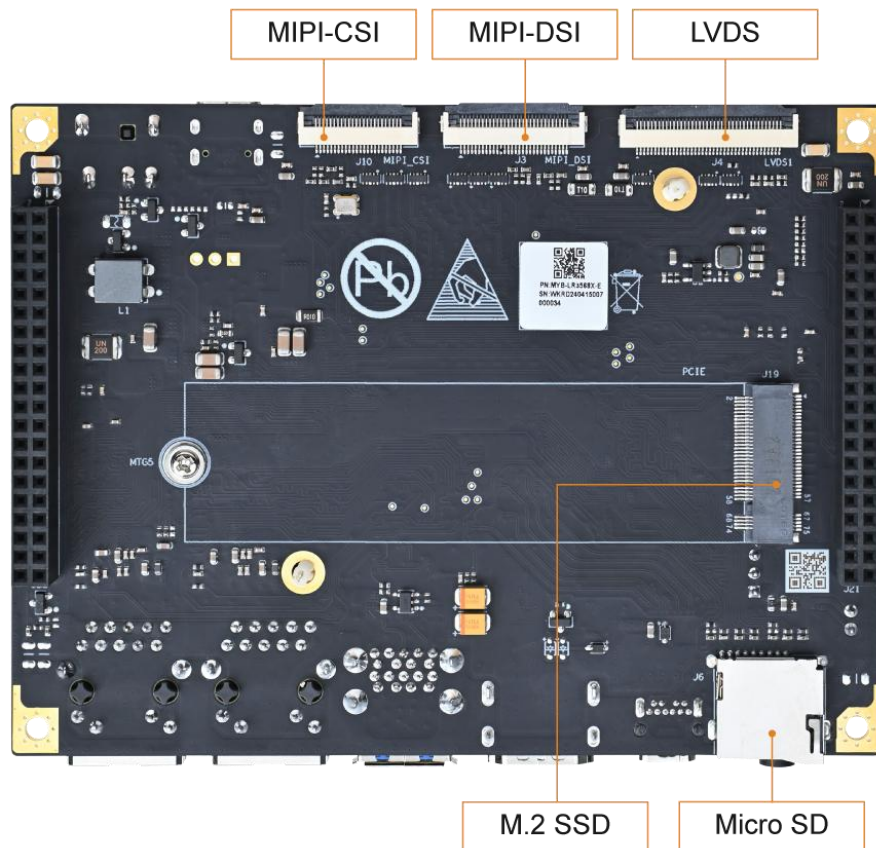
the MYD-LR3568 Development Board (RK3568] version) Integrates with the MY-ICEB001 Expansion Board



MY-ICEB001 Expansion Board



MYD-LR3568 Development Board (RK3568J version) Top-view (delivered with a pre-installed heatsink by default)

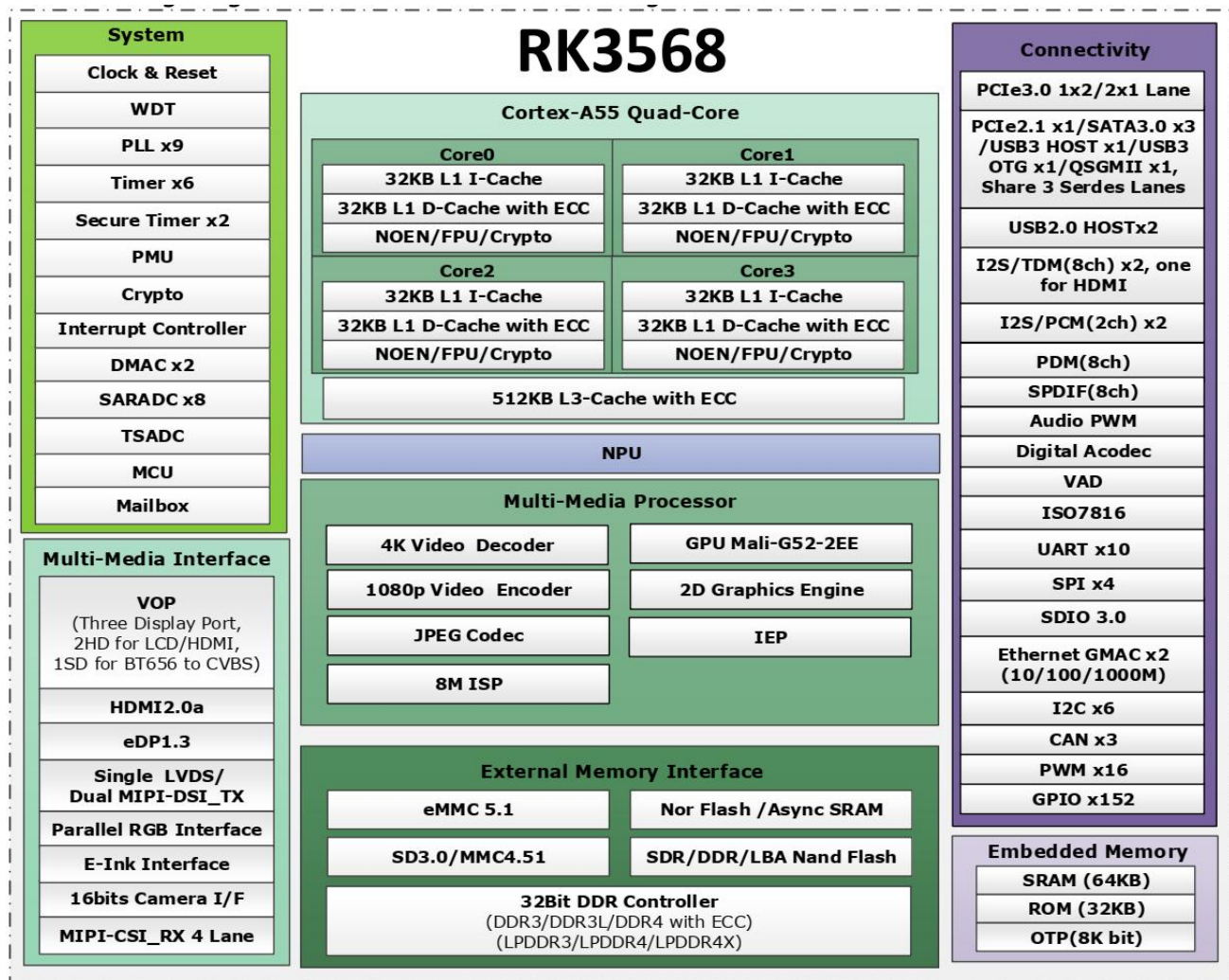


MYD-LR3568 Development Board (RK3568J version) Bottom-view

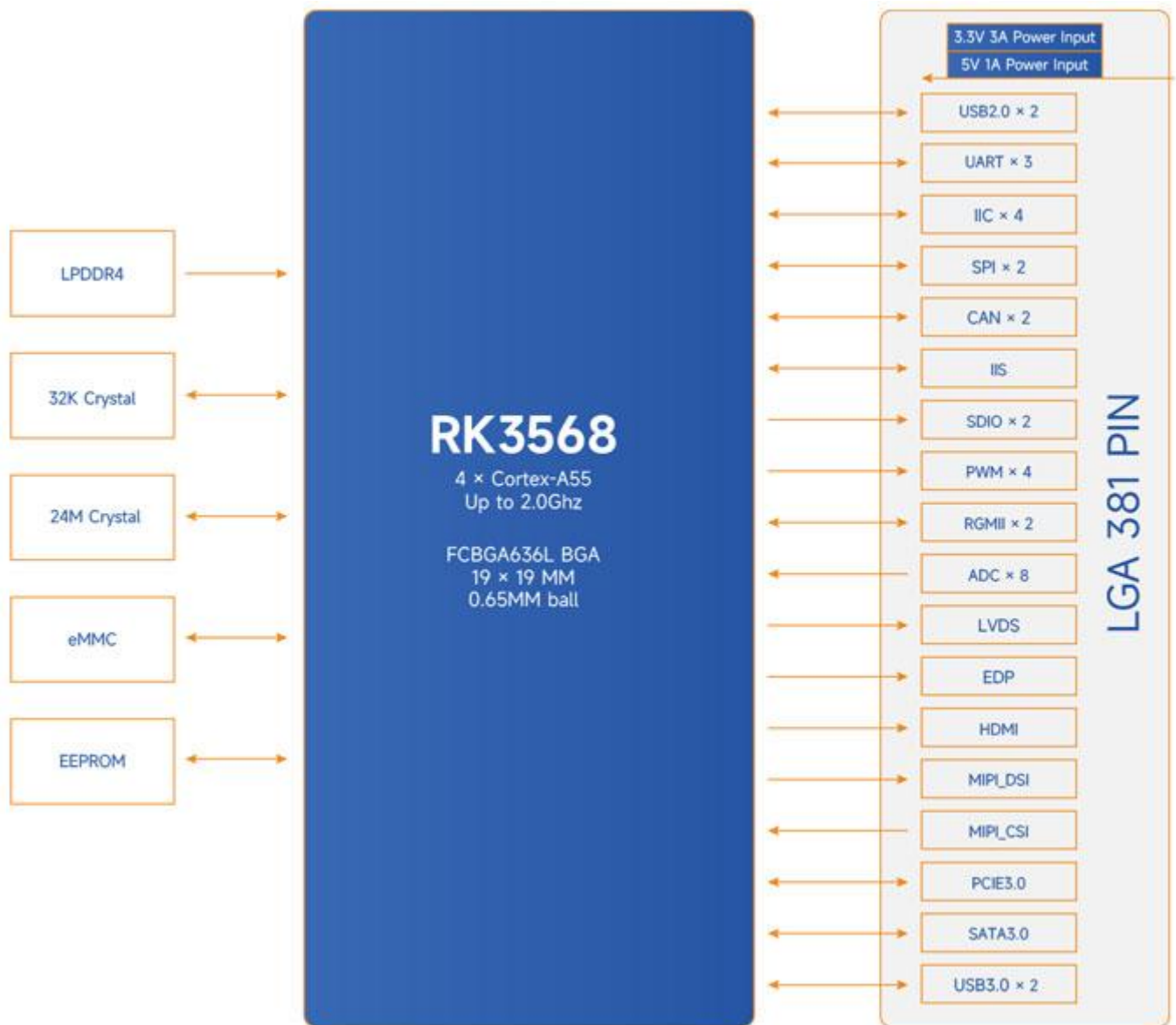
Hardware Specification

The RK3568 is a high-performance general-purpose SoC produced by Rockchip, which adopts an advanced 22nm process technology and integrates a 4-core ARM A55 processor and an advanced Mali G52 2EE graphics processor. It supports 4K decoding and 1080P encoding. Moreover, the RK3568 supports various types of peripheral interfaces such as SATA/PCIe/USB3.0, and has a built-in independent NPU that can be used for lightweight artificial intelligence (AI) applications. The RK3568 is targeted at a diverse range of applications, including IoT gateways, NVR storage, industrial control, HMI, cloud terminals, central vehicle controllers, and facial recognition systems. Its robust performance and feature set make it a reliable and versatile solution for these demanding applications.

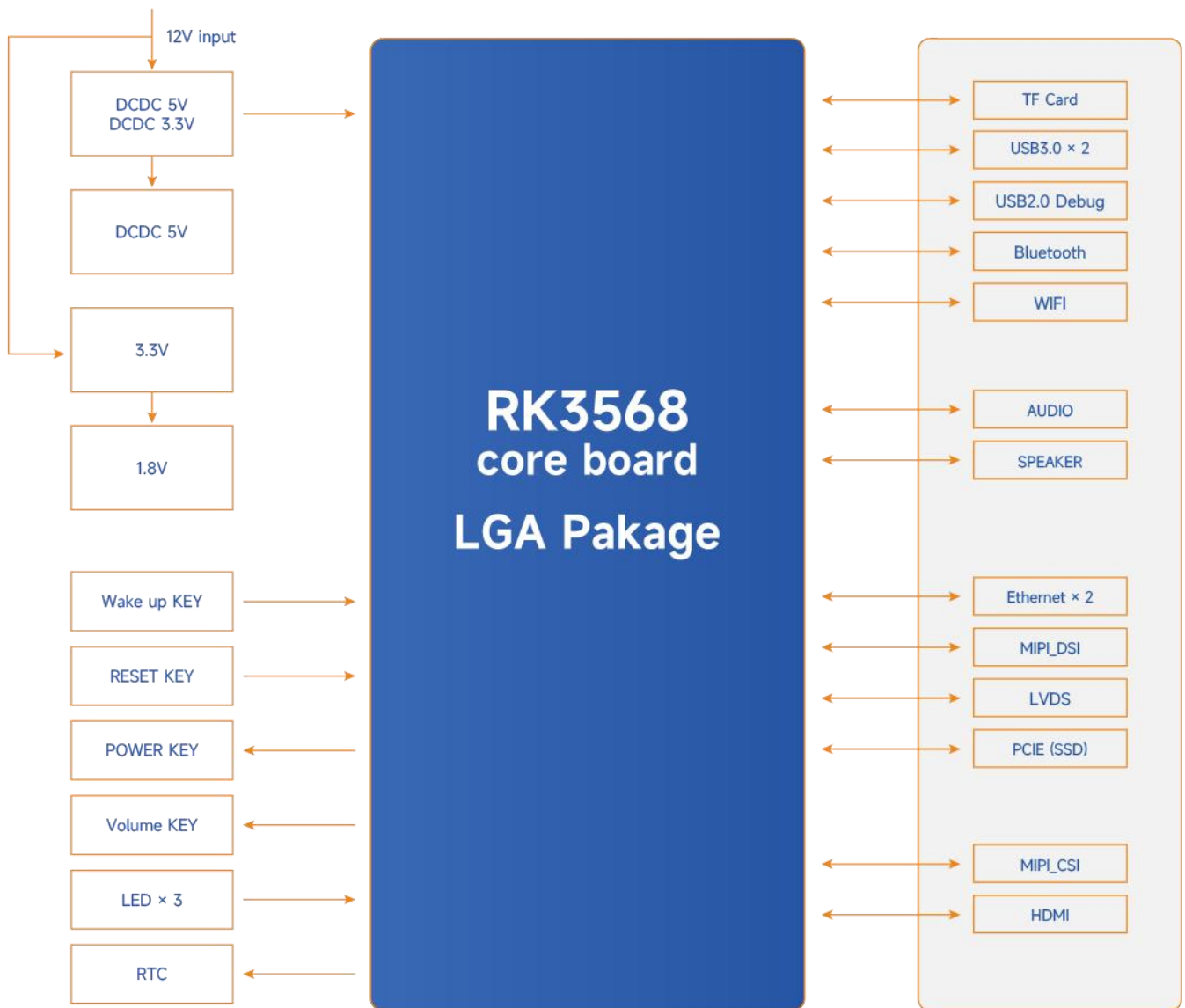
MYIR utilizes the RK3568B2 and RK3568J for its MYC-LR3568 System-on-Module. Both the RK3568B2 and RK3568J are fully compatible and share the same FCCSP636L package. The MYC-LR3568 equipped with the RK3568B2 supports an operating temperature range of -20 to 70 degrees Celsius, with a CPU clock speed reaching up to 2.0GHz. Meanwhile, the MYC-LR3568 featuring the RK3568J can operate within a temperature range of -40 to 85 degrees Celsius, and its CPU clock speed reaches up to 1.8GHz in overdrive mode.



RK3568 Processor Block Diagram



MYC-LR3568 System-On-Module Function Block Diagram



MYD-LR3568 Development Board Function Block Diagram

The MYD-LR3568 Development Board is using the MYC-LR3568 SOM as core controller board. It takes full features of Rockchip RK3568 processor and the main features are characterized as below:

Mechanical Parameters

- Dimensions: 90mm x 120mm (base board), 43mm x 45mm (SOM)
- PCB Layers: 6-layer design (base board), 12-layer design (SOM)
- Power supply: +12V/3A (base board); +5V/1A, 3.3V/3A (SOM)
- Working temperature: -40~85 Celsius (industrial grade) or -20~70 Celsius (extended temperature) (WiFi/BT Module: -30~85 Celsius)



The MYD-LR3568 Controller Board (MYC-LR3568 SOM)

Processor

- Rockchip RK3568 processor
 - Quad-core ARM Cortex-A55@2.0GHz (RK3568B2)/Quad-core ARM Cortex-A55@1.4GHz (RK3568J)
(If you need RK3568J version at 1.8GHz in overdrive mode, please inquire MYIR.)
 - Arm Mali-G52 2EE GPU with support for OpenGL ES 1.1/2.0/3.2, OpenCL 2.0, Vulkan 1.1
 - Up to 1.0 TOPS NPU
 - Supports 4K 60fps H.265/H.264/VP9 Decoder and 1080P 60fps H.265/H.264 Encoder

Memory

- 2GB LPDDR4 (supports 1GB/4GB/8GB)
- 16GB eMMC (supports 8GB/32GB)
- 32KB EEPROM

Peripherals and Signals Routed to Pins

- Power Management IC
- 381-pin LGA Expansion Interface
 - 2x RGMII/RMII
 - 1x PCIe3.0, 1x 2 lane RC/EP, 2x 1 lane RC
 - 2x USB 2.0 Host
 - Multi-PHY (USB3.0 OTG/SATA0, USB3.0 Host/SATA1/QSGMII/SGMII, PCIe2.1/SATA2/QSGMII/SGMII)
 - SDIO (SDIO3.0/EMMC4.5.1, SDIO3.0)
 - 10x UART
 - 3x CAN2.0 a/b
 - 6x I2C
 - 15x PWM
 - 4x SPI
 - 8x SARADC, 10-bit
 - 1x DVP Camera Input, 16-bit
 - 1x MIPI-CSI, 4 lane/2+2 lane, 2.5Gbps
 - 1x HDMI2.0 (supports 4K@60fps/1080p@120fps)
 - 1x eDP1.3 (supports 2.5K@60fps)
 - 1x LVDS/Dual MIPI-DSI (supports 2.5Kp@60fps)
 - 1x Parallel RGB (supports 1080p@60fps)
 - 2x I2S/PCM, 8-channel
 - 1x I2S/PCM, 2-channel
 - 1x PDM, 8-channel
 - Up to 152x GPIOs

Note: the peripheral signals brought out to the expansion interface are listed in maximum number. Some signals are reused. Please refer to the processor datasheet and the SOM pinout description file.



The MYD-LR3568 Development Board Base Board

- 1 x Power Jack
- 1 x Debug UART (USB Type-C connector)
- USB
 - 2x USB 3.0 Host (Type-A)
 - 1x USB 2.0 Host (via MiFAN expansion interface)
- 2x 10/100/1000Mbps Ethernet interfaces
- 1x WiFi/Bluetooth Module (complies with IEEE 802.11a/b/g/n/ac standard and supports BT 5.2)
- 2x CAN interfaces (via RPI expansion interface)
- 1x Micro SD card slot
- 1x M.2 NVME SSD PCIe slot
- 1x FAN socket
- 1x HDMI interface
- 1x Mini DP interface
- 1x MIPI-DSI interface
- 1x Single-channel 4 lane LVDS interface
Supports MYIR's MY-LVDS070C LCD Module with Capacitive Touch Screen
- 1x MIPI-CSI Camera Interface
Support MYIR's MY-CAM004M 4AHD-to-MIPI Camera Module and MY-CAM005M MIPI Camera Modules
- 1x 3.5mm Headphone/Mic Audio Jack
- 5x Buttons (Reset, Upload, Power, Volume+, Volume-)
- 2x Extension interfaces
 - RPI interface (2.54mm pitch 2x 20-pin expansion connector, GPIO/I2C/UART/SPI/CAN, compatible with Raspberry PI standard 40-pin extension interface)
 - MiFAN interface (2.54mm 2x 20-pin expansion connector, GPIO/I2C/UART/SPI/USB/PWM)



Software Features

The MYD-LR3568 development board offers supports for Linux and Debian OS and is equipped with comprehensive software packages. To assist clients in speeding up their projects, the kernel and numerous peripheral drivers are provided in source code format. Below is a brief overview of the key software feature:

Item	Features	Description	Source Code
Bootloader	ATF	Switching and initialization of secure and non-secure environments	YES
	SPL	Initialize DDR, RTC, PMIC, and load the image into RAM	YES
	U-boot	Boot program uboot_2017.09	YES
Linux kernel	Linux kernel	Customized base on official kernel_5.10.198 version	YES
Device driver	MMC	eMMC driver	YES
	USB Host	USB driver	YES
	I2C	I2C driver	YES
	SPI	SPI driver	YES
	Ethernet	Gigabit Ethernet driver	YES
	UART	RS232/RS485 Driver	YES
	CSI	MIPI Camera driver Support MYIR's MY-CAM003M camera module (OV5640)	YES
	RTC	RTC driver	YES
	GPIO Key	Key driver	YES
	GPIO LED	LED driver	YES
	HDMI	HDMI driver	YES
	Touch	Touch screen driver	YES
	WIFI/Bluetooth	WIFI/BT driver	YES
	SOUND	Audio driver	YES
	LVDS	LVDS driver	YES
File system	myir-lr3568-core	Full-featured Linux image without GUI, built by buildroot	YES
	myir-image-debian	Compiled and constructed based on Debian 11 SDK	YES

MYC-LR3568 Software Features



Order Information

Product Item	Part No.	Packing List
MYD-LR3568-GK Development Kit	MYD-LR3568J-16E2D-180-I-GK	<div>✓ One MYD-LR3568 Board (for RK3568J)</div> <div>✓ One MY-ICEB001 Expansion Board</div> <div>✓ One USB cable</div> <div>✓ One 12V/3A Power adapter</div> <div>✓ One Quick Start Guide</div>
MYD-LR3568 Development Board	MYD-LR3568B2-16E2D-200-E	<div>✓ One MYD-LR3568 Board (for RK3568B2)</div> <div>✓ One USB cable</div> <div>✓ One 12V/3A Power adapter</div> <div>✓ One Quick Start Guide</div>
MYC-LR3568 System-On-Module	MYC-LR3568J-16E2D-180-I	<div>Add-on Options</div> <div>✓ One MYC-LR3568 SOM</div> <div>✓ MY-LVDS070C 7-inch LCD Module</div> <div>✓ MY-CAM004M Camera Module</div> <div>✓ MY-CAM005M Camera Module</div>
	MYC-LR3568B2-16E2D-200-E	
MY-LVDS070C 7-inch LCD Module	MY-LVDS070C	
MY-CAM004M 4AHD-to-MIPI Camera Module	MY-CAM004M	
MY-CAM005M MIPI Camera Module	MY-CAM005M	
<div>Note:</div> <div>1. One MYD-LR3568 Development Board comprises one MYC-LR3568 SOM mounted onto the base board. If you require additional SOMs, you may place orders for extras.</div> <div>2. The RK3568J used can only work at 1.4GHz in normal mode. If you need RK3568J version at 1.8GHz in overdrive mode, please inquire MYIR.</div> <div>3. Bulk discounts are available. For inquiries, kindly contact MYIR.</div> <div>4. We cater to custom design requests based on the MYD-LR3568, whether it involves reducing, adding or modifying the existing hardware components to suit the customers' specific needs.</div>		



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